REMARKS

The rejections, made in the parent application, under 35 U.S.C. §103(a) as unpatentable, of:

Claims 16-17, 19-24, 30-34, 36-38 over U.S. 5,777,779 (Hashimoto et al) in view of U.S. 6,366,013 (Leenders et al), and in view of either one of U.S. 6,040,939 (Demiryont et al), U.S. 6,379,788 (Choi et al), U.S. 5,780,160 (Allemand et al), or U.S. 5,805,330 (Byker et al);

Claims 25-26 over the above combination of prior art in (1), and further in view of U.S. 5,800,918 (Chartier et al); and

Claims 27-29 over the above combination of prior art in (1), and further in view of U.S. 6,362,121 (Chopin et al),

are respectfully traversed.

As recited in independent Claim 16, the invention is a glazing comprising (a) at least one electrochromic system having variable optical and/or energy properties, (b) at least one coating for adjusting the optical appearance conferred on the said glazing by the said system, said at least one coating having antireflection properties in the visible, wherein said coating having antireflection properties is deposited on at least one of the external faces of said glazing and comprises a stack of at least two superposed thin layers having alternately high and low reflective indices, whose average refractive index is between 1.6 and 1.9, and is an SnO_2/SiO_2 or $SnO_2/SiO_2/SnO_2$ stack, or a graded-refractive-index layer, and (c) at least one coating for attenuating/modifying the color of the glazing in reflection, wherein said at least one coating of component (c) acts to lower C* saturation values in the (L, a*, b*) colorimetry system of the glazing in reflection.

When both the antireflection and attenuating/modifying coatings are present, superior results are obtained, which are unobtainable without both layers, or without the antireflection

coating. This superiority is demonstrated in the comparative data of record, and particularly, in Examples 3 and 4, described in the specification beginning at page 18, line 37. Better filtering properties toward heat rays, higher TL values in the bleached state (with a TL that can reach 80%, which is a real achievement for an electrochromic glazing, because the electrochromic layers, even in the bleached state, do remain a little bit absorbing). So, the anti-reflecting stack of thin layers acts in synergy with the electrochromic system, thermally **and** optically, both in the colored and uncolored state of the electrochromic system, which combination of both thermal and optical effects could not have been predicted.

Example 3 is according to the claimed invention; Example 4 contains no antireflection coating. As disclosed in the specification beginning at page 19, line 28, the optical properties of the glazing were improved when at least one coating attenuating the color or an antireflection coating was provided, but the maximum improvement was obtained by using both types of coating together. The following optical properties in the bleached state (+1.2 V supply), and in the colored state (-1.6 V supply) were compared for Examples 3 and 4:

light transmission T_L (%);

values of a_{TL}* and b_{TL}* in the (L*, a*, b*) system in transmission;

light reflection R_{L1} on the "internal side" and the corresponding a* and b* values;

light reflection R_{L2} on the "external side" and the corresponding a* and b* values;

energy transmission T_E (%);

energy reflection R_{E1} (on the external side);

energy reflection R_{E2} (on the internal side), and

solar factor SF (the solar factor is the ratio between the total energy entering the room through the glazing to the incident solar energy).

This data is shown in the specification at (corrected) Table 1 and Table 2 at page 21, and at page 22, lines 1-8, wherein for Example 3, the SF is 33% in the coloured state (-1.6 V)

and 73% in the bleached state (+1.2 V); and for Example 4, the SF is 32% in the coloured state and 67% in the bleached state.

As disclosed in the specification at page 22, lines 9-24:

> It may be seen from this data that, in the case of Example 3 according to the invention, it is possible to achieve a wider light transmission range and, in particular, to achieve a T_L of almost 80% in the bleached state. The energy transmission in the bleached state of Example 3 is also lower than that of Example 4 and the energy reflections are higher, whether in the coloured sate or in the bleached state. Example 4, which has only the anti-colour coating, already shows an improvement over standard electrochromic glazing, especially with regard to R_{L1} and R_{L2} colorimetry in reflection. But Example 3, in which an antireflection coating has been added, allows the T_L range to be broadened towards higher values and allows the glazing to be made more effective from the standpoint of the filtration of thermal, especially solar, radiation.

The presently-claimed subject matter is neither disclosed nor suggested by the applied prior art.

Hashimoto et al is drawn to an electrochromic device which, as noted by the Examiner, may contain an anti-reflection coating in the form of multi-layers composed of a plurality of different kinds of monolayers on an exposed surface of the substrate for the electrochromic device (column 3, lines 2-7).

Leenders et al discloses an anti-reflection coating, which may be a stack of layers having alternatively very low and very high refractive indices (column 7, line 40 - column 8, line 10), for reducing the reflection of information displays such as electrochromic displays (column 10, line 63). But Leenders et al neither discloses nor suggests an anti-reflection coating whose average refractive index is between 1.6 and 1.9, and is an SnO_2/SiO_2 or $SnO_2/SiO_2/SnO_2$ stack.

The Examiner relies alternatively on Demiryont et al, Choi et al, Allemand et al, and Byker et al, as meeting the terms of the presently-recited at least one coating for attenuating/modifying the color of the glazing in reflection. Demiryont et al disclose an anti-solar, low-emissivity functioning multi-layer coating on a transparent substrate, wherein the

substrate may be an electrochromic device (column 6, line 18), which multi-layer coating, as shown in Fig. 2 and disclosed at column 7, line 36 ff, may contain a color control layer between the substrate and a first anti-reflecting coating. Demiryont et al discloses that the color control layer is preferably formed of silicon or tungsten metal, and its purpose is to achieve both enhanced uniformity and desired hue or color of the coated article, wherein uniformity of color refers to reduction in blotchiness or the like which may otherwise appear in a coated article (column 7, lines 36-52). Choi et al discloses an anti-reflection film wherein, in an embodiment for so-called "flat screen" cathode ray tubes, dark screen color is provided by applying to the glass of the screen an anti-reflection film having at least one colored layer therein, wherein the colored layer may be separate from all the other layers of the film and serves solely to provide the necessary tint (paragraph bridging columns 7 and 8). Allemand et al disclose an electrochromic device sandwiched between two transparent substrates, which substrates may have a coating on the outward facing surface, which may be, *inter alia*, an anti-reflection coating and a colored coating (column 7, lines 48-59). Byker et al disclose an electro-optic window incorporating a discrete photovoltaic device, which may contain an optional layer, such as a layer of, *inter alia*, an anti-reflection and/or a color suppression material or materials deposited between a transparent conductive material **16** and front glass rear face **12**b and/or between transparent conductive material **18** and rear glass front face **14**a to suppress or filter out any unwanted portion of the electromagnetic spectrum (column 5, lines 61-67).

Chartier et al discloses a multi-layered hydrophobic window glass comprising one or more layers and a hydrophobic-oleophobic, abrasion-resistant coating which may include a layer of hydrolyzable fluorinated alkylsilanes.

Chopin et al discloses a substrate coated with a coating having a photocatalytic property based on titanium dioxide at least partially crystallized in the anatase form.

At least one fundamental flaw in all of the above rejections is that none of Demiryont et al, Choi et al, Allemand et al, and Byker et al disclose a coating for attenuating/modifying the color of the glazing in reflection, as that term would be understood from the disclosure, and as recited in independent Claim 16. This layer acts to lower C* saturation values in the (L, a*, b*) colorimetry system of the glazing in reflection, and thus has a function different from the color control layer of Demiryont et al, different from the colored layer of Choi et al, and different from the colored layer of Allemand et al. Furthermore, while it is not clear from Byker et al precisely how their color suppression layer functions, nevertheless, Byker et al require that their anti-reflection layer, if present, be at a location **within** their electro-optic window, rather than on an external face thereof, as required by the present claims. Thus, if one skilled were to combine Byker et al with Hashimoto et al and Leenders et al, even if there was some overlap between present component (c) and Byker et al's color suppression layer, the result would not be the presently-claimed invention.

Nor do any of Demiryont et al, Choi et al, Allemand et al, and Byker et al disclose the particular layer relied on by the Examiner, together with a coating having antireflection properties deposited on at least one of the external faces of a glazing and comprising a stack of at least two superposed thin layers having alternately high and low reflective indices, whose average refractive index is between 1.6 and 1.9, and is an SnO_2/SiO_2 or $SnO_2/SiO_2/SnO_2$ stack.

And as discussed above, Leenders et al neither discloses nor suggests the presently-recited anti-reflection stack.

Neither Chartier et al nor Chopin et al remedy any of the deficiencies of the broad rejection, since neither disclose nor suggest the glazing of Claims 16.

Claims 22 and 23 are each separately patentable because, contrary to the finding by the Examiner, the first conductive layer and second conductive layer of Hashimoto et al are not analogous to the carrier substrate and primer/tie-layer coating of these claims.

In an Advisory Action, dated June 6, 2003, in the parent application, the Examiner's response to the above arguments regarding Demiryont et al, Choi et al, Allemand et al and Byker et al was simply a reference to page and line where the application of these references is discussed in the Final Office Action in the parent application. But the Examiner never explains how the respective layers relied on in each of these references meets the terms of presently-recited component (c).

Regarding the separate patentability of Claims 22 and 23, the Examiner contended that Applicants have failed to supply any basis for why the rejection of these claims is improper.

In reply, the basis was (and is) as discussed above.

This application is now ripe for examination on the merits. An early examination is respectfully solicited.

Respectfully submitted,

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